Use of Ordinary Plate Glass as a Gamma-Ray Dosimeter

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tive in preventing formation of either of those structural imperfections associated with trapped electrons or positive holes holes. As to the valency changes of cerium ion itself, a small part of trivalent cerium ions was found to loose their electron upon irradiation by the reaction

$$Ce^{3+} + h\nu \rightarrow [Ce^{3+} \text{ with positive hole}] + e^{-}.$$

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Megumi TASHIRO, Sumio SAKKA and Naohiro SOGA

Yogyo Kyokaishi (Journal of the Ceramic Association, Japan), **68**, 191 (1960)

The gamma-ray dose rate distribution in a small closed space, 80mm in dia., 110mm in height, was determined by the use of small pieces of ordinary plate glass, 15×6×1.72mm, as a dosimeter. The technique of the measurement was described. The advantageous features of the glass dosimeter, i.e., its small size, convenient usage, and preciseness in the measurement, were discussed. A brief description of the construction of a small Co-60 irradiator, in which the measurement was made, was appended.

Mechanicel Strength of Polycrystalline Materials Propuced from Platinum Containing Glasses

Megumi TASHIRO, Sumio SAKKA and Masamichi WADA

Yogyo Kyokaishi (Journal of the Ceramic Association, Japan), **68**, 223 (1960)

Rindone found that a small amount of platinum (0.01%) introduced into a glass of the composition $Li_2O \cdot 4SiO_2$ acts as a nucleating agent on reheating, converting the whole mass into an assembly consisting of extremely small crystals (G. E. Rindone, *J. Am. Ceram. Soc.*, **41**, 41 (1958)).

This paper presents the results of the investigation of authors which covers the nucleation by platinum for glasses contaning Li_2O, MgO, Al_2O_3, and SiO_2. The bending strength was used for the evaluation of the effect of the nucleating agent.

(1) **Optimum amount of platinum.** The glasses of the composition, Li_2O 12.5, K_2O 2.5, Al_2O_3 4, SiO_2 81% by weight, added, respectively, with 0, 0.001, 0.01, 0.1% of platinum were formed into the specimens of the size 50×5×2.5mm. Taking the density increase as a reference the effect of the concentration of platinum on the devitrification of the specimens under a stepwise heat treatment was investigated. It was found out that 0.01% was sufficient for the completion of devitrification.

The bending strength of the devitrified specimen increased with increasing platinum content. Taking into consideration of the cost of platinum the authors